The Semiaquatic Bugs (Hemiptera, Gerromorpha): Phylogeny, Adaptations, Biogeography, and Classification.—N. Møller Andersen. 1982. Entomonograph Vol. 3. Scandinavian Science Press Ltd., Klampenborg, Denmark, 455 pp. $35.00.

Andersen's book represents something of a landmark in the study of the Hemiptera, for seldom does such a comprehensive treatment of a group appear. The last obvious example was "Monograph of Cimicidae" (Usinger, 1966), which dealt with the bedbugs in more detail but with a somewhat different emphasis. Andersen has singlehandedly attempted a generic level morphological review and phylogenetic analysis as well as presenting a discussion of adaptations, historical biogeography, and classification. In the form of appendices he presents for the Gerromorpha lists of names and keys for all higher taxa and genera.

The semiaquatic bugs in Andersen's sense include the families Gerridae, Hebridae, Hermatobatidae, Hydrometridae, Macroveliidae, Mesoveliidae, Paraphrynoveliidae, and Veliidae. This usage may be unfamiliar to some workers, especially in North America, where groups such as the Saldidae, Gelastocoridae, and Ochteridae are often referred to as semiaquatic Hemiptera. Andersen presents an interesting review of the history of the classification of the Gerromorpha, documenting its monophyly with what appears to me to be strong morphological evidence. One must conclude from the results of his analysis that the more inclusive use of the term semiaquatic should be abandoned by hemipterists.

Andersen demonstrates his skill as an artist and a technician, presenting several hundred well executed line drawings based on original light microscopic work as well as many scanning electron micrographs—some published here for the first time with the remainder gathered from a string of revisionary works which Andersen began on the Gerromorpha nearly two decades ago.

This volume appears at a time when systematics and biogeography are being revolutionized by methodological innovation. Nils Andersen has made a serious attempt to incorporate both the techniques of cladistics and vicariance biogeography into his analysis. I consider his initial explication of principles basically redundant with what already exists in the literature. Nonetheless, these principles as outlined by Andersen clearly indicate the somewhat divergent emphasis in phylogenetics in Andersen's work—and probably that of most continental Europeans—with the approach adopted by many North Americans. Notable is Andersen's emphasis on reconstruction of the ground plan.

The minor differences in cladistic methods as espoused by Andersen and practiced by others are far less important than his desire to be explicit about his methods. His book presents a theory of relationships for the Gerromorpha that contradicts the findings of Cobben (1978) and Popov (1971). Nonetheless, it appears to me that Andersen offers a consistent interpretation of

the available evidence and has presented an example of the type of comprehensive documentation for which all of us should strive. Whatever the merits of his conclusions, his hypotheses can be easily understood and readily tested by all future workers.

The analysis presented by Andersen will be most enthusiastically read by systematists. Nonetheless, the synthetic nature of Andersen's work will make this comparatively inexpensive volume a valuable reference for all biologists interested in the Gerromorpha.—*Randall T. Schuh, Department of Entomology, American Museum of Natural History, New York, New York 10024.*

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